

Appendix 4 Annual Update  
Procedure

## POTENTIAL SCOPE OF WORK:

### ANNUAL EVALUATION OF PERFORMANCE MEASURES

As discussed in Section 7 of the TSAP, full updates to the TSAP should be completed at longer intervals (approximately every five to seven years) to allow adequate time for implementation of actions identified in the plan and for analysis of crash data that reflects these actions, as well as changes in roadway characteristics, traffic characteristics, and driver behavior.

Annual updates should be completed to track progress towards addressing the key emphasis areas and performance measures identified in the TSAP. These updates are intended to be a streamlined effort to track progress towards improving the safety performance of the County's system. It is assumed that the County may hire a consultant to assist with the updates to the TSAP. Therefore, the draft scope items below are provided from this point of view.

The following tasks for updating the Plan and evaluating performance measures are based on the 2019 TSAP and could include the following tasks:

- ▶ Data Processing:
  - Consultant will download the latest year(s) of crash data available from ODOT's crash database.
  - Consultant will map the crashes using GIS, and assign crashes additional attributes based on the following roadway network characteristics:
    - Roadway jurisdiction (state road, county road, private road, etc.)
    - Location relative to intersections (is the crash within 250' of an intersection or not?)
    - Location relative to City boundaries:
      - Is the crash within the City of Redmond, Sisters, La Pine, or Bend?
      - Is the crash within the Bend MPO area?
  - Roadway functional classification (arterial, collector, local)
- ▶ Performance Measure Tracking: For crashes on County facilities in unincorporated areas (outside the Bend UGB area and outside the Redmond, Sisters, and La Pine city limits): Consultant will summarize the number of reported fatal and severe injury crashes during the most recent five-year period, as well as the corresponding fatal/severe injury crash rate per 100 million VMT, by the following categories:
  - Fatal crashes
  - Severe injury crashes
  - Fatal or severe injury crashes involving:
    - Pedestrians
    - Bicyclists
    - Motorcyclists
    - Alcohol or drugs
    - Speed
    - Lane departure crashes

- ▶ Crash Mapping:
  - Mapping of crash types by performance measure: Consultant will create maps to correspond to each performance measure to understand where fatal and severe crashes occurred. These maps may be expanded to include all injury crashes to better illustrate location-based patterns.
- ▶ Summary of Performance Measures:
  - Consultant will prepare a memorandum to summarize the County's performance in the areas identified above, noting those where progress has been made and those for continued focus. Consultant will identify strategies from the 2019 TSAP for the County to prioritize based on the results of the performance measure tracking.

## POTENTIAL SCOPE OF WORK:

### COMPLETE TSAP UPDATES (APPROXIMATELY EVERY 5 – 7 YEARS)

Approximately every five to seven years, after adequate time has passed, the County should complete full updates to the TSAP. These full updates are intended to:

- ▶ Document actions completed since the last TSAP;
- ▶ Document progress made towards improving safety performance;
- ▶ Identify new or updated actions for the County to take to improve safety performance based on current data.

It is assumed that the County may hire a consultant to assist with the full update to the TSAP. Therefore, the draft scope of work is provided from this point of view. This scope of work summarizes the kinds of general activities and types of subtasks that could be needed to update the TSAP. This scope should be reevaluated at the time of the next TSAP update to reflect changes in context, best practices, interagency coordination, and County personnel. For example, recommended actions from the 2019 TSAP include the development of a regional stakeholder group focused on transportation safety; this group may decide to coordinate the County's TSAP update with other agencies. The 2019 TSAP update also incorporated recommendations for the cities of Redmond, Sisters, and La Pine; these cities may prefer to develop their own TSAPs in the future.

## Representative TSAP Update Activities and Subtasks

### Task 1: Project Management

This task is anticipated to provide the following objectives:

- ▶ Identify and track project issues that affect the project design, schedule and budget;
- ▶ Coordinate the work of team members;
- ▶ Maintain a project file and record;
- ▶ Manage resources to successfully complete the project;
- ▶ Coordinate with Deschutes County in the development of meeting materials and information; and,
- ▶ Conduct day-to-day management of project's issues and work products.

# DESCHUTES COUNTY, LA PINE, REDMOND, & SISTERS

## DESCHUTES COUNTY TRANSPORTATION SAFETY ACTION PLAN

### Task 1.1 – Project Management Administration

Consultant shall schedule and coordinate work tasks within this scope of work and shall maintain liaison and coordination with Deschutes County. Consultant's Project Manager (PM) shall communicate with Deschutes County regarding the status of work being performed and to discuss issues or concerns that may impact the project. Consultant shall monitor the project budget and expenditures. Consultant's PM shall be the primary point of contact for the CPM.

Consultant shall prepare monthly invoices in a format approved by Deschutes County. The monthly invoices shall include a project status report that summarizes the activities completed that month.

### Task 1.1a Project Kick-Off Meeting

Consultant will conduct a project kick-off meeting with Deschutes County to confirm the work plan and schedule and to establish meeting dates for the bi-weekly check-in meetings and other key milestone meetings to occur during the project. Consultant will prepare a proposed agenda for this meeting and also prepare a meeting summary after the meeting.

Consultant and County will discuss advisory committee purpose, role, and candidate attendees. Project Advisory Committee members should include stakeholders who have been involved in implementing actions from the County's 2019 TSAP and could potentially include representatives from:

- ▶ ODOT Region 4
- ▶ City of Bend
- ▶ Bend MPO
- ▶ City of Redmond
- ▶ City of Sisters
- ▶ City of La Pine
- ▶ Oregon Highway Patrol
- ▶ Deschutes County Sheriff
- ▶ Deschutes County Health Services Department
- ▶ Deschutes County District Attorney's Office
- ▶ Commute Options
- ▶ Bend – La Pine School District
- ▶ Bicycle and Pedestrian Advisory Committee
- ▶ Interested citizens

### Task 1.1b Periodic Check-In Meetings

Consultant will conduct bi-weekly check-in conference calls to discuss project status, upcoming milestones, and any other critical project issues or decisions that need to be resolved with the County project manager. Consultant will provide brief meeting notes, in email format, following them to document key decisions and discussion items.

### Deliverables

- ▶ Monthly invoices and progress reports
- ▶ Informal meeting notes for bi-weekly check-in conference calls

### Task 1.2 – Project Management Team meetings

The objective of this subtask is to provide regular check-ins on scope, schedule, and budget with the CPM. Consultant shall facilitate up to four (4) Project Management Team (PMT) meetings. These meetings shall be via telephone and will be scheduled to last 30 minutes each.

The PMT meetings will cover the following topics, unless County staff request modifications:

- ▶ PMT Meeting #1: Review the proposed project schedule and framework, which will rely on input from the existing data inventory, prior to the first Project Advisory Committee (PAC) meeting. Review the list of actions completed since the 2019 TSAP was completed; this list will be provided by the County.
- ▶ PMT Meeting #2: Review the findings from the existing conditions analysis and confirm performance measures and risk factors for use in screening the system.
- ▶ PMT Meeting #3: Review the recommended countermeasure locations prior to the second PAC meeting.
- ▶ PMT Meeting #4: Review the draft plan prior to the third PAC meeting.

Meetings

- ▶ Up to four (4) PMT conference calls.

## **Task 2: Data Collection and Analysis**

This task will be used to gain an understanding of the current crash types, trends, and causes and how these patterns have changed since the completion of the 2019 TSAP.

### **Task 2.1 Establish Framework for Safety Analysis and Management**

Consultant will work with Deschutes County to identify the types of data summaries and approach to the safety analysis to determine the most beneficial approach for the analysis for the current plan and into the future. The framework will establish near-term and long-term goals, currently available data, the audience for the TSAP update, and desired outputs from the analysis.

The 2019 TSAP relied on two performance measures for screening intersections and segments on the County's network: Equivalent Property Damage Only (EPDO) and Excess Proportion of Specific Crash Types. The future update may use these performance measures, unless the County and Consultant identify a need to use a different method. For example, if traffic volume data is more readily available across the County's GIS network (meaning that the majority of County roadway segments and intersections have an estimate of volume assigned to them), a performance measure for crash rate may be used.

#### **Task 2.1a – Inventory and Processing of Existing Data**

Consultant shall evaluate existing crash data from the most recent five years available in the ODOT crash database. The County will provide available roadway and infrastructure data, as well as traffic volumes, in GIS format. Using the available roadway and traffic data, the consultant will assign the crashes attributes based on the roadway network. These may include:

- ▶ Roadway jurisdiction (state road, county road, private road, etc.)
- ▶ Location relative to intersections (is the crash within 250' of an intersection)
- ▶ Location relative to City boundaries:
  - Is the crash within the City of Redmond, Sisters, La Pine, or Bend?
  - Is the crash within the Bend MPO area?
- ▶ Roadway functional classification (arterial, collector, local)
- ▶ Traffic volumes
- ▶ Observed speed data
- ▶ Presence of pedestrian and bicycle facilities
- ▶ Proximity to destinations such as schools and transit stops

Deliverables

- ▶ Framework Memorandum

Task 2.2 – Existing Conditions and Range of Countermeasures

Consultant shall develop a memorandum summarizing the existing safety conditions. Consultant shall provide breakdown of the crash data for the following categories either in the memorandum or appendix, with further analysis into these categories when appropriate:

- ▶ Time of day
- ▶ Driver age
- ▶ Crash causes
- ▶ Speeding
- ▶ Involvement of alcohol or drugs
- ▶ Severity
- ▶ Crash type
- ▶ Urban/rural
- ▶ Pedestrian and bicycle crashes
- ▶ Motorcycle crashes
- ▶ Distracted driving

Consultant's work will result in the identification of:

- ▶ Up to two performance measures for use in screening the network to identify updated countermeasure locations based on available data.
- ▶ A summary of key crash trends and/or risk factors to be further evaluated in Task 2.2a for countermeasures. This may include crash characteristics such as crash type or contributing factors, as well as roadway characteristics, traffic characteristics, or location characteristics such as proximity to schools.
- ▶ A comparison of how Deschutes County is performing in the key emphasis areas identified in the Oregon statewide TSAP near-term emphasis areas, including risky behaviors, infrastructure, vulnerable users, and improved systems.
- ▶ A comparison of the emphasis areas identified in the 2019 TSAP to the County's performance in those areas based on the new data. This will inform areas where the County has been successful at improving safety performance and areas for the County to continue (or start) focusing efforts at reducing fatal and severe injury crashes.

Task 2.2a Infrastructure Improvement Countermeasure Locations

Based on the recurring crash trends, crash patterns, and risk factors identified in the existing Conditions analysis, Consultant will identify updated location-based solutions and revise the low-cost systemic countermeasure toolbox that can be applied across Deschutes County.

Consultant will evaluate the Deschutes County roadway network in unincorporated areas in line with the existing conditions analysis to determine the top 20 locations based on up to two performance measures using historic crash data. Performance measures for use in screening the system will be selected with input from County staff in Task 2.2. Possible methods may include EPDO screening, Excess Proportions of Specific Crash Types screening, ODOT SPIS calculation, locations exhibiting the highest fatal and injury A crash rate (pending readily available traffic volume data), and locations exhibiting the highest fatal and injury A crash frequency. With the County's input, Consultant will narrow the top locations down to 10 sites for potential

projects and provide countermeasure recommendations to address those locations. Some of these may be sites identified in the 2019 TSAP, if the locations remain in the top ranked sites.

Consultant will also identify the top three crash patterns or infrastructure/traffic characteristics associated with higher crash risk and suitable for systemic safety solutions for the unincorporated County and will recommend typical countermeasures to be implemented on a system-wide basis. This will involve a review of and update of the 2019 TSAP's systemic toolbox.

Consultant will identify planning level cost ranges based on unit costs for recommended solutions for the 10 location-based solutions and the systemic solutions in the toolbox.

#### Task 2.2b Non-Infrastructure Countermeasures

Based on the recurring crash trends, crash patterns, and risk factors identified in the existing conditions analysis, Consultant will identify crash patterns that may be best addressed through education, enforcement, or emergency services considerations.

With the County's input, the Consultant will summarize the status of actions from the 2019 TSAP, indicating whether actions are completed, in-process, or not started. Consultant will reevaluate the list of actions in the 2019 TSAP to identify those that are still current based on the results from the updated existing conditions analysis.

The Consultant will organize a multidisciplinary meeting with appropriate representatives of key stakeholders and groups responsible for implementing the 2019 TSAP actions to discuss the crash trends and non-engineering solutions to further support fatal and severe crash reductions. Consultant will provide a summary of the key issues identified based on the available data and the status and relevance of the non-infrastructure actions identified in the 2019 TSAP. Consultant will facilitate a workshop with the group to discuss the existing action items and potential changes or additions to the action items based on current data.

#### Deliverables

- ▶ Existing Safety Conditions Summary

#### Meetings

- ▶ Multidisciplinary Meeting

### **Task 3: Transportation Safety Action Plan**

This task includes the update of the transportation safety action plan as well as corresponding meetings with the project team and the advisory committee team.

#### Task 3.1 – Deschutes County Safety Action Plan Documentation

Consultant shall update the TSAP document that summarizes the emphasis areas, systemic toolbox, engineering recommendations, and non-infrastructure recommendations. There will be draft submittals throughout the project process, which are anticipated to be at the following stages:

- ▶ Draft Deschutes County TSAP
- ▶ Draft Final Deschutes County TSAP
- ▶ Final Deschutes County TSAP

This document shall include:

- ▶ A list of up to 10 locations in unincorporated Deschutes County that are the most critical locations based on most recent historic crash data ("hot-spots").
- ▶ A list of up three systemic solutions based on historic crashes.

# DESCHUTES COUNTY, LA PINE, REDMOND, & SISTERS

## DESCHUTES COUNTY TRANSPORTATION SAFETY ACTION PLAN

- ▶ Planning level cost ranges for recommended solutions identified as part of the analysis – up to 10 location based solutions and solutions in the systemic toolbox.
- ▶ Comparison of crash trends and rates compared to Statewide crash rates.
- ▶ Update performance measures to track progress towards reduction in severe crashes.
- ▶ Strategies that identify data supported solutions for engineering, enforcement, education, and emergency vehicle response
- ▶ Recommendations on funding sources to implement safety solutions.

This document shall be focused on County roadways but shall also include all jurisdictions for systemic level strategies as well as enforcement, education, and emergency vehicle response level strategies.

### Deliverables

- ▶ Draft Deschutes County Safety Action Plan
- ▶ Draft Final Deschutes County Safety Action Plan
- ▶ Final Deschutes County Safety Action Plan

### Task 3.2 – Advisory Committee Meetings

Consultant shall assist the county with three advisory committee meetings. Deschutes County will develop an advisory committee list with support from the Consultant. There will be up to three advisory committee meetings, each up to two hours long. The first meeting may be used to introduce the committee to the update project, the 2019 TSAP document, and progress completed since 2019, in addition to gathering input on observed safety throughout the County. The second meeting may be used to share and discuss the range of infrastructure and non-infrastructure countermeasures. The third meeting may be used to present the updated draft TSAP and gather comments from the advisory committee. Consultant will develop an agenda and power point to be used for presentation at the meetings.

### Meetings

- ▶ Advisory Committee Meeting #1, #2, and #3 up to two hours in length

### Task 3.3 – Annual Update Procedure

Deschutes County seeks to periodically update the crash data elements within this plan to keep the plan current and measure performance. The consultant will draft a Standard Operating Procedure and work scope to assist the County in procuring future consultant led updates to the statistical elements of this plan.

### Deliverables

- ▶ Standard Operation Procedure for future TSAP Updates